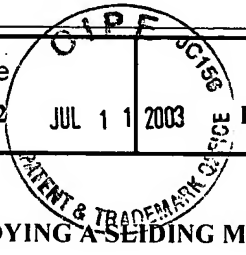
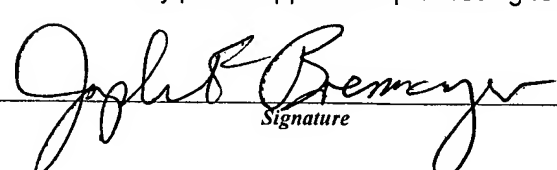
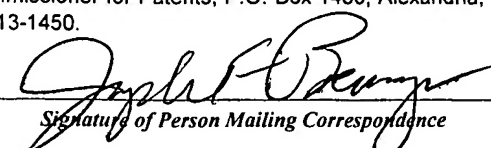


368 3

<b>AMENDMENT TRANSMITTAL LETTER (Small Entity)</b>				Docket No. <b>9620010.APP</b>	
Applicant(s): <b>Ribbens et al.</b>					
Serial No. <b>10/068,270</b>	Filing Date <b>02/06/2002</b>		Examiner <b>Kramer, Devon C.</b>	Group Art Unit <b>3683</b>	
Invention: <b>ANTILOCK BRAKING SYSTEMS EMPLOYING A SLIDING MODE OBSERVER BASED ESTIMATION OF DIFFERENTIAL WHEEL TORQUE</b>					
<u>TO THE COMMISSIONER FOR PATENTS:</u>					
Transmitted herewith is an amendment in the above-identified application.					
<input checked="" type="checkbox"/> Small Entity status of this application has been established under 37 CFR 1.27 by a verified statement previously submitted. <input type="checkbox"/> A verified statement to establish Small Entity status under 37 FR 1.27 is enclosed.					
The fee has been calculated and is transmitted as shown below.					
<b>CLAIMS AS AMENDED</b>					
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	29 -	29 =	0 x	\$9.00	\$0.00
INDEP. CLAIMS	3 -	3 =	0 x	\$42.00	\$0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
<b>TOTAL ADDITIONAL FEE FOR THIS AMENDMENT</b>					<b>\$0.00</b>
<input checked="" type="checkbox"/> No additional fee is required for amendment. <input type="checkbox"/> Please charge Deposit Account No. _____ in the amount of _____ <input type="checkbox"/> A check in the amount of _____ to cover the filing fee is enclosed. <input type="checkbox"/> The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. _____ <input type="checkbox"/> Any additional filing fees required under 37 C.F.R. 1.16. <input type="checkbox"/> Any patent application processing fees under 37 CFR 1.17.					
 Signature			Dated: <b>July 7, 2003</b>		
<b>Joseph F. Breimayer</b> Reg. No. 25,551 <b>BREIMAYER LAW OFFICE</b> 1221 Nicollet Mall, Suite 206 Minneapolis, MN 55403 612 338 1279			<div style="border: 2px solid black; padding: 5px; display: inline-block;"> <b>RECEIVED</b>  <b>JUL 16 2003</b>  <b>GROUP 3600</b> </div>		
cc:			<div style="border: 1px solid black; padding: 5px;">         I certify that this document and fee is being deposited on <b>July 8, 2003</b> with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.            Signature of Person Mailing Correspondence  <b>Joseph F. Breimayer</b>          Typed or Printed Name of Person Mailing Correspondence       </div>		



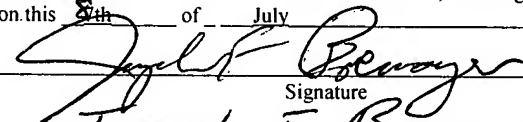
#6  
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7/22/03

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Gibbens et al. Examiner: Kramer, Devon C.  
Serial No. 10/068,270 Group Art Unit: 3683  
Filing Date: February 6, 2002 Docket No.: 9620010.APP  
Title: ANTILOCK BRAKING SYSTEMS EMPLOYING A SLIDING  
MODE OBSERVERBASED ESTIMATION OF DIFFERENTIAL  
WHEEL TORQUE

**CERTIFICATE OF MAILING UNDER 37 CFR 1.8:** I hereby certify that this RESPONSE AND ELECTION and any papers described herein, are being deposited in the U.S. Postal Service, as first class mail, addressed to the Commissioner of Patents and Trademarks, Washington, DC 20231 on this 8<sup>th</sup> of July, 2003.

  
Signature  
Joseph F. Breininger  
Printed Name

**RESPONSE AND ELECTION WITH TRAVERSE**

Assistant Commissioner for Patents  
U.S. Patent and Trademark Office  
Washington, DC 20231

**RECEIVED**  
JUL 16 2003  
**GROUP 3600**

SIR:

In the Office Action, the Examiner requires that an election be made pursuant to 35 U.S.C. 121 between unidentified claims directed to five species corresponding to FIGs. 3 through 7. The Examiner takes the position that there are no pending claims that are generic to all five figures. However, the Examiner makes no showing of this position, and consequently, makes his position difficult to understand.

For example, independent Claims 1 and 16 can be read on all five figures. Claims 1 and 16 include five steps or elements labelled (a) through (e) for convenience as follows:

- (a) means for measuring wheel angular speed;
- (b) means for processing the measured wheel angular speed in a sliding mode observer to calculate an estimated differential wheel torque, wherein said differential wheel torque represents the difference between wheel drag torque, generated at the interface of the tire and the ground surface, and applied braking torque;
- (c) means for generating a threshold differential wheel torque from measured wheel angular speed;
- (d) means for generating a braking control signal from comparison of the estimated differential wheel torque and the threshold differential wheel torque; and
- (e) means for applying the braking control signal to a brake actuator as an applied braking torque so as to optimize wheel slip during braking.

Element/step (a) corresponds to block 26 in all FIGs. 3-7. Elements/steps (b) and (c) correspond to the sliding mode observer 10 (depicted in FIG. 2) in all FIGs. 3-7. Elements/steps (d) corresponds to block 28 in all FIGs. 3-7.

Element/step (e) corresponds to the "on/off" signal from block 28 to "a brake actuator", which can be found in block 32 or 40 of all FIGs. 3-7. It is respectfully submitted that the independent Claims 1 and 16 are generic and link all of the so-called "species" claims. Clarification of the Examiner's position that these claims do not read on all illustrated embodiments is requested.

Without acquiescing in the Examiner's positions, applicants elect to examine the Claims 1-5, 7-11, 14, 16-20, 22-26 and 29 that can be read on FIG. 7. Of this set, at least Claims 2, 3, 7-10, 17, 18, and 22-25 relate to the elements or functions of blocks 10 and 28 of all of FIGs. 3-7.

This election and the statements made herein are not intended to and do not constitute an admission that the species or any of the elected claims are obvious variants.

The number of differing "species" is not unreasonable, and the prior art search of the elected Claims. It is respectfully requested that the restriction requirement be withdrawn and all of the claims examined simultaneously and either allowed or rejected for a justifiable reason. The Examiner is respectfully invited to telephone the undersigned to discuss the claims and the reasons that he may have for maintaining the restriction requirement.

Dated: July 7, 2003

Respectfully Submitted,

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